

**APPENDIX A**

1 (Currently Amended). A modular switch comprising:

~~fiber and power access ports for receiving and distributing  
physical signal and power connection media;~~

dual optical trunking modules coupled to transmit optical  
signals to and receive optical signals from a service provider,  
the dual optical trunking modules including a first optical  
trunking module and a second optical trunking module;

dual optical switch fabric modules coupled to transmit  
optical signals to and receive optical signals from subscriber  
service modules the dual optical trunking modules, the dual  
optical switch fabric modules ~~and~~ including a first optical  
switch fabric module and a second optical switch fabric module;  
and

a plurality of subscriber service modules coupled to  
transmit optical signals to and receive optical signals from the  
dual optical switch fabric modules and a plurality of  
subscribers, each of the plurality of subscriber service modules  
for providing subscriber services to respective ones of the  
plurality of subscribers;

wherein the dual optical trunking modules and the dual  
optical switch fabric modules provide redundancy by routing  
optical signals through the first optical trunking module to

both the first optical switch fabric module and the second optical switch fabric module and routing signals through the second optical trunking module to both the first optical switch fabric module and the second optical switch fabric module;

wherein the first optical trunking module transmits and receives optical signals to and from the service provider in a first physical direction along an optical ring network and the second optical trunking module transmits and receives optical signals to and from the service provider in a second physical direction, opposite the first physical direction, along the optical ring network

~~dual optical trunking modules coupled to transport switched signals between the dual optical switch fabric modules and a service provider optical network, the optical trunking modules providing optical transport distance and redundancy and include a first trunking module and a second trunking module; and~~

~~at least one service signal port coupled to the dual optical trunking modules, via the dual optical switch fabric modules, to transmit and receive signals and provide access to a subscriber.~~

2 (Original). The modular switch of claim 1 wherein the dual optical trunking modules each comprise one or more 1 gigabit

Ethernet trunk optic cards or one or more 10 gigabit Ethernet optics cards.

3 (Previously Presented). The modular switch of claim 1 wherein the dual optical switch fabric modules each comprise 32 Gbps or higher switch fabrics.

4 (Currently Amended). The modular switch of claim 1 wherein the dual optical switch fabric modules support at least one of ethernet switching, Internet Protocol routing, Multiprotocol Label Switching, and Resilient Packet Ring.

5 (Original). The modular switch of claim 1 further comprising an environmentally hardened outdoor housing.

6 (Currently Amended). The modular switch of claim 1 wherein the dual optical trunking modules, the dual optical switch fabric modules, and ~~other component parts of the modular switch,~~ including the plurality of subscriber service modules and ~~power supplies,~~ comprise environmentally hardened optical and electrical components.

7 (Original). The modular switch of claim 6 wherein the optical

and electrical components have an operating temperature range of about -40 degrees Celsius to 60 degrees Celsius.

8 (Currently Amended). The modular switch of claim 1 ~~further comprising at least one subscriber service module and a plurality of subscriber service module slots, wherein each of the at least one~~ plurality of subscriber service modules interfacing between one or more subscriber end points and the dual optical switch fabric modules and comprising at least one subscriber ~~signal~~ service port, ~~each subscriber service module slot configured to receive one of the at least one subscriber service module.~~

9 (Currently Amended). The modular switch of claim 8 further comprising a plurality of subscriber service module slots, with each subscriber service module slot receiving a different one of the plurality of subscriber service modules.

10 (Currently Amended). The modular switch of claim 8 ~~further comprising a plurality of subscriber service modules~~ wherein the subscriber service modules collectively provide access to ninety-six homes.

11 (Currently Amended). The modular switch of claim 1 ~~further comprising a subscriber service module~~ wherein each of the plurality of subscriber service modules is coupled to one or both of the dual optical trunking modules, via one or both of the dual optical switch fabric modules, providing network connectivity for subscriber ~~signal~~ service ports contained in the subscriber service module.

12 (Currently Amended). The modular switch of claim 11 wherein each of the plurality of subscriber service modules comprises multiple single mode, single fiber, environmentally hardened optical transceivers serving as subscriber ~~signal~~ service ports.

13 (Currently Amended). The modular switch of claim 1 wherein the first optical trunking module ~~transports~~ transmits and receives optical signals in ~~one~~ the first physical direction and the second optical trunking module ~~transports~~ transmits and receives optical signals in ~~a different~~ the second physical direction, ~~each optical trunking module~~ using one or more optical fibers.

14 (Currently Amended). The modular switch of claim 13 wherein ~~the optical trunk~~ connections to the dual optical trunking

modules comprise one of a layer 2 link aggregation and a layer 3 link aggregation to enable both route and equipment protection.

15 (Currently Amended). The modular switch of claim 13 further comprising ~~wherein the~~ fiber access ports used by the dual optical trunking modules to receive optical signals from and transmit optical signals to a ring network architecture.

16 (Currently Amended). The modular switch of claim 1 wherein connections to the plurality of subscribers ~~the subscriber access comprises a~~ comprise point to point connections.

17 (Currently Amended). The modular switch of claim 1 wherein the dual optical switch fabric modules are coupled to transmit optical signals to and receive optical signals from at least one of the dual optical trunking modules, the dual optical switch fabric modules further providing at least one of optical signal switching, routing, and traffic aggregation, ~~and redundancy~~.

18 (Currently Amended). An optical network comprising:

~~a network transmitting a signal;~~  
a router coupled ~~to the network~~ to route the optical signals;

an environmentally hardened modular switch coupled to the router ~~and subscriber end points~~, the modular switch receiving optical signals from and transmitting optical signals to the router and the subscriber end points to provide point to point subscriber access; and

at least one fiber access box at a destination coupled to the modular switch, ~~with the~~ each fiber access box receiving optical signals from and transmitting optical signals to the modular switch;

wherein the modular switch comprises: ~~dual optical trunking modules, dual optical switch fabric modules, and a plurality of subscriber service modules, the dual optical trunking modules coupled to at least one of the dual optical switch fabric modules and the dual optical switch fabric modules coupled to the subscriber service modules~~

dual optical trunking modules coupled to transmit optical signals to and receive optical signals from a service provider via the router, the dual optical trunking modules including a first optical trunking module and a second optical trunking module;

dual optical switch fabric modules coupled to transmit optical signals to and receive optical signals from the dual optical trunking modules, the dual optical switch fabric modules

including a first optical switch fabric module and a second optical switch fabric module; and

a plurality of subscriber service modules coupled to transmit optical signals to and receive optical signals from the dual optical switch fabric modules and the at least one fiber access box, each of the plurality of subscriber service modules for providing subscriber services to respective ones of a plurality of subscribers;

wherein the dual optical trunking modules and the dual optical switch fabric modules provide redundancy by routing optical signals through the first optical trunking module to both the first optical switch fabric module and the second optical switch fabric module and routing signals through the second optical trunking module to both the first optical switch fabric module and the second optical switch fabric module;

wherein the first optical trunking module transmits and receives optical signals to and from the service provider in a first physical direction along an optical ring network and the second optical trunking module transmits and receives optical signals to and from the service provider in a second physical direction, opposite the first physical direction, along the optical ring network.



19 (Currently Amended). The optical network of claim 18 wherein the modular switch performs at least one of fully redundant switching, aggregation, quality of service classification, and signal transport between the plurality of subscribers and the service provider ~~network~~.

20 (Original). The optical network of claim 18 wherein the network, the router, and the modular switch are coupled through ring architectures.

21 (Currently Amended). The optical network of claim 18 further comprising one or more pedestals coupled between the modular switch and the at least one fiber access box, the pedestal providing a fiber breakout point coupling the at least one fiber access box to the modular switch.

22 (Currently Amended). The optical network of claim 21 further comprising a fiber distribution device coupled to the modular switch wherein the pedestal provides a fiber breakout point coupling the at least one fiber access box to the modular switch through the fiber distribution device.

23 (Currently Amended). The optical network of claim 18 wherein

the at least one fiber access box comprises an optical to electrical conversion unit.

24 (Currently Amended). The optical network of claim 18 wherein the at least one fiber access box comprises a voice over Internet protocol media gateway.

25 (Currently Amended). The optical network of claim 18 further comprising intelligent home networking equipment coupled to the at least one fiber access box, the home networking equipment located within a subscriber premise.

26 (Currently Amended). The optical network of claim 18 wherein the at least one fiber access box comprises a plurality of fiber access boxes.

27 (Currently Amended). The optical network of claim 18 further comprising an environmentally hardened fiber splice cabinet coupled between the modular switch and ~~one or more~~ the at least one fiber access boxes, the fiber splice cabinet providing a fiber splice point between subscriber optical service cables and multiple fiber trunk cables used for connecting fiber access boxes to the modular switch, the subscriber optical service

cables mating with subscriber service ports on the subscriber service modules.

28 (Original). The optical network of claim 27 wherein the environmentally hardened fiber splice cabinet includes multiple fiber access ports for one or more fiber trunk cables and one or more subscriber service cables.

29 (Original). The optical network of claim 27 wherein the fiber access ports of the environmentally hardened fiber splice cabinet comprise one or more fiber access ports accommodating one of one 96 fiber cable, two 48 fiber cables, four 24 fiber cables, eight 12 fiber cables, and one 72 fiber cable plus one 24 fiber cable.

30 (Original). The optical network of claim 18 wherein the router comprises an internet protocol router.

31 (Currently Amended). A method of providing a signal to a destination comprising:

receiving a redundant optical signal in ~~one~~ each of two optical trunking modules;

transmitting the received redundant optical signal to ~~one~~

~~or~~ each of two dual optical switch fabric modules;

optically switching and aggregating the received redundant  
optical signal;

providing quality of service for the switched redundant  
optical signal;

transmitting the switched redundant optical signal to one  
of several subscriber service ports contained on subscriber  
service modules; and

transmitting the switched redundant optical signal from the  
one of the several subscriber service ports to a subscriber  
fiber access box of a destination.

32 (Currently Amended). The method of claim 31 further  
comprising receiving the redundant optical signal from a network  
and routing the redundant optical signal to the ~~switch~~ two  
optical trunking modules.

33 (Currently Amended). The method of claim 31 further  
comprising converting the redundant optical signal from an  
optical signal to an electrical signal in the subscriber fiber  
access box.

34 (Currently Amended). The method of claim 31 wherein

transmitting the switched redundant optical signal from the one of the several subscriber service ports to the subscriber fiber access box ~~is~~ comprises transmitting the switched redundant optical signal to the subscriber fiber access box through an optical splice cabinet and a fiber breakout point housed in a pedestal.

35 (Currently Amended). The method of claim 34 wherein transmitting the switched redundant optical signal through the pedestal to the subscriber fiber access box comprises transmitting the switched redundant optical signal through the pedestal to one of a plurality of subscriber fiber access boxes.

36 (Currently Amended). The method of claim 34 wherein transmitting the switched redundant optical signal through the pedestal to the subscriber fiber access box comprises transmitting the switched redundant optical signal through one or more pedestals to one or more subscriber fiber access boxes.